

WHAT IS CLAIMED IS:

1. A structural Fe-Cr steel sheet comprising:

about 0.0025 to about 0.010 mass% of C;

about 0.0025 to about 0.010 mass% of N;

about 0.015 mass% or less of C + N;

about 0.01 to about 1.0 mass% of Si;

about 0.01 to about 0.30 mass% of Mn;

about 0.04 mass% or less of P;

about 0.03 mass% or less of S;

about 8 mass% to less than about 10 mass% of Cr;

about 0.01 to about 1.0 mass% of Cu;

about 0.01 to about 1.0 mass% of Ni;

about 0.01 to about 0.20 mass% of V;

about 0.05 mass% or less of Al; and

the balance being Fe and incidental impurities, wherein the tensile strength is about 400 to about 450 MPa.

2. The structural Fe-Cr steel sheet according to Claim 1, further comprising about 1.0 mass% or less of Mo.

3. A method for manufacturing a structural Fe-Cr steel sheet, comprising:

heating a steel raw material to a temperature of about 1,100 to about 1,280°C, which comprises about 0.0025 to about 0.010 mass% of C; about 0.0025 to about 0.010 mass% of N; about 0.015 mass% or less of C + N; about 0.01 to about 1.0 mass% of Si; about 0.01 to about 0.30 mass% of Mn; about 0.04 mass% or less of P; about 0.03 mass% or less of S; about 8 mass% to less than about 10 mass% of Cr; about 0.01 to about 1.0 mass% of Cu; about 0.01 to about 1.0 mass% of Ni; about 0.01 to about 0.20 mass% of V; about 0.05 mass% or less of Al; and the balance being Fe and incidental impurities;

hot rolling the steel raw material into a steel sheet;

finishing the hot rolling at a temperature of more than about 930°C;

coiling the steel sheet at a temperature of more than about 810°C to form a coil; and

cooling the coil at an average cooling rate of about 2°C/min or less from about 800 to about 400°C, which is an average cooling rate of inside the coil, to obtain a tensile strength of about 400 to about 450 MPa.

4. The manufacturing method according to Claim 3, wherein the hot rolling comprises rough rolling with at least one pass with a reduction in thickness of about 30% or more at a temperature of more than about 1,000°C.

5. The manufacturing method according to Claim 3, wherein the steel raw material further comprises about 1.0 mass% or less of Mo.

6. The manufacturing method according to Claim 5, wherein the hot rolling comprises rough rolling with at least one pass with a reduction in thickness of about 30% or more at a temperature of more than about 1,000°C.

7. The manufacturing method according to Claim 3, wherein, during cooling, the average cooling rate of about 2°C/min or less from about 800 to about 400°C is a cooling rate of substantially every point of the entire coil.

8. The manufacturing method according to Claim 4, wherein, during cooling, the average cooling rate of about 2°C/min or less from about 800 to about 400°C is a cooling rate of substantially every point of the entire coil.

9. The manufacturing method according to Claim 5, wherein, during cooling, the average cooling rate of about 2°C/min or less from about 800 to about 400°C is a cooling rate of substantially every point of the entire coil.

10. The manufacturing method according to Claim 6, wherein, during cooling, the average cooling rate of about 2°C/min or less from about 800 to about 400°C is a cooling rate of substantially every point of the entire coil.

11. The manufacturing method according to Claim 7, wherein the cooling is performed with a heat insulating box, a heat insulating cover, or a heat insulating furnace.

12. The manufacturing method according to Claim 8, wherein the cooling is performed with a heat insulating box, a heat insulating cover, or a heat insulating furnace.
13. The manufacturing method according to Claim 9, wherein the cooling is performed with a heat insulating box, a heat insulating cover, or a heat insulating furnace.
14. The manufacturing method according to Claim 10, wherein the cooling is performed with a heat insulating box, a heat insulating cover, or a heat insulating furnace.
15. Structural shaped steel formed by electric resistance welding using the steel sheet according Claim 1.
16. Structural shaped steel formed by electric resistance welding using the steel sheet according Claim 2.
17. Structural shaped steel formed by electric resistance welding using the steel sheet formed by the manufacturing method according to Claim 3.
18. Structural shaped steel formed by electric resistance welding using the steel sheet formed by the manufacturing method according to Claim 4.
19. Structural shaped steel formed by electric resistance welding using the steel sheet formed by the manufacturing method according to Claim 7.

20. Structural shaped steel formed by electric resistance welding using the steel sheet formed by the manufacturing method according to Claim 11.